

Notice of Allowability

Application No.

09/891,222

Examiner

Pedro J. Cuevas

Applicant(s)

TAKAHASHI ET AL.

Art Unit

2834

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to amendment After Final filed on April 11, 2003.
2. ☒ The allowed claim(s) is/are 1-13.
3. ☐ The drawings filed on _____ are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).
- * Certified copies not received: _____.
5. ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
 - (a) ☐ The translation of the foreign language provisional application has been received.
6. ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application. **THIS THREE-MONTH PERIOD IS NOT EXTENDABLE**

7. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
8. ☐ CORRECTED DRAWINGS must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No. _____.
 - (b) ☐ including changes required by the proposed drawing correction filed _____, which has been approved by the Examiner.
 - (c) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No. _____.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet.

9. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|--|---|
| 1 <input type="checkbox"/> Notice of References Cited (PTO-892) | 2 <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3 <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 4 <input type="checkbox"/> Interview Summary (PTO-413), Paper No. _____. |
| 5 <input type="checkbox"/> Information Disclosure Statements (PTO-1449), Paper No. _____. | 6 <input type="checkbox"/> Examiner's Amendment/Comment |
| 7 <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit of Biological Material | 8 <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance |
| | 9 <input type="checkbox"/> Other |

DETAILED ACTION

Allowable Subject Matter

1. Claims 1-13 are allowed.
2. The following is an examiner's statement of reasons for allowance.

Iwatani et al. clearly teaches the construction of a voltage regulator of a vehicle AC generator including a field circuit having a field coil and a plurality of magnetic poles and a output circuit having an armature coil, said voltage regulator comprising:

first means, connected to said armature coil, comprising:

a power drive circuit including a pulse conversion circuit for converting said self-excited voltage into a binary pulse signal,

said power-drive circuit supplies electric power to said power circuit according to said binary pulse signal,

detects a voltage level of said self-excited voltage, and

detects the frequency of said self-excited voltage;

second means for supplying field current to said field coil when said self-excited voltage is detected, comprising a control circuit for controlling said field current, and a power circuit connected to said control circuit; and

a bypass circuit having electric resistance, connected between said armature coil and a ground.

Reime et al. teach the construction of an electric power plant for motor driven vehicles having a variable resistance and means for decreasing said variable resistance comprising a

switching circuit and a circuit for decreasing said resistance after increasing said resistance for a predetermined duration for the purpose of controlling the frequency of an oscillator.

Kusase et al. teach the use of a pulse conversion circuit which:

forms said pulse signal having a plurality of times as many frequency as a frequency of said output voltage for converting said self-excited voltage into a binary pulse signal;

forms said pulse signal having two times as many frequencies as a frequency of said output voltage from a pair of said phase-windings whose phases are 90° different from each other and drives said power circuit when said rectifier unit provides an output voltage that is higher than a predetermined voltage;

includes a pulse conversion circuit for converting said self-excited voltage into a binary pulse signal; and

has a switch for opening or closing a circuit connecting said battery and said power line;

said drive circuit driving said power circuit for a predetermined period from an edge of said pulse signal for the purpose of providing A/D conversion of imputed voltages V_p , V_B and V_{IG} respectively, and outputted pulse voltages V_{g1} through V_{g6} .

The prior art of record, taken alone or in combination, fails to teach the construction of a voltage regulator of a vehicle AC generator as described on independent claims 1 and 8, wherein:

an input terminal and a detection line connecting said input terminal and an armature coil for detecting a self-excited voltage induced in the armature coil by a residual magnetic flux of a rotor; and

means for decreasing a variable resistance of a bypass circuit when the self-excited voltage is not detected and increasing the variable resistance of the bypass circuit when the self-excited voltage is detected.

The prior art of record also fails to teach the construction of a voltage regulator of a vehicle AC generator as described on independent claim 9, wherein:

an input terminal and a detection line connecting said input terminal and an armature coil for detecting a self-excited voltage induced in the armature coil by a residual magnetic flux of a rotor; and

a pulse conversion circuit comprising a comparator connected to one phase winding and a flip-flop circuit connected to the comparator.

Dependent claims 2-7 and 10-13 are considered allowable by their respective dependence on allowed independent claims 1 and 9.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

3. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. See PTO-892.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Pedro J. Cuevas whose telephone number is (703) 308-4904. The examiner can normally be reached on M-F from 8:30 - 6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nestor R. Ramírez can be reached on (703) 308-1371. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 305-1341 for regular communications and (703) 305-3432 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

Pedro J. Cuevas
June 16, 2003

 **KARL TAMAI**
PRIMARY EXAMINER